

Problem Statement-3

```
package arrays;
public class Rangeq {

    static int k=16;
    static int n=100000;
    static long t[][]=new long[n][k+1];
    static void sparsetable(int a[],int n) {
        for(int i=0;i<n;i++) t[i][0]=a[i];
        for(int j=1;j<=k;j++) {
            for(int i=0;i<=n-(1<<j);i++)
t[i][j]=t[i][j-1]+t[i+(1<<(j-1))][j-1];
        }
    }
    static long query(int L,int R) {
        long ans=0;
        for(int j=k;j>=0;j--) {
            if(L+(1<<j)-1<=R) {
                ans=ans+t[L][j];
                L+=1<<j;
            }
        }
        return ans;
    }

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        int a[]={3,7,2,5,8,9};
        int n=a.length;
        sparsetable(a,n);
        System.out.println(query(0,5));
        System.out.println(query(3,5));
        System.out.println(query(2,4));

    }
}
```

```
run window help
Arrayrotation.java Orderstatistics.java Rangeq.java × Circularll.java Doublell.java Matrix.java Queuee.java
4
5 static int k=16;
6 static int n=100000;
7 static long t[][]=new long[n][k+1];
8 static void sparsetable(int a[],int n) {
9     for(int i=0;i<n;i++) t[i][0]=a[i];
10    for(int j=1;j<=k;j++) {
11        for(int i=0;i<=n-(1<<j);i++) t[i][j]=t[i][j-1]+t[i+(1<<(j-1))][j-1];
12    }
13 }
14 static long query(int L,int R) {
15     long ans=0;
16     for(int j=k;j>=0;j--) {
17         if(L+(1<<j)-1<=R) {
18             ans=ans+t[L][j];
19             L+=1<<j;
20         }
21     }
22     return ans;
23 }
24
25 public static void main(String[] args) {
26     // TODO Auto-generated method stub
27     int a[]={3,7,2,5,8,9};
28     int n=a.length;
29     sparsetable(a,n);
30     System.out.println(query(0,5));
}

Problems @ Javadoc Declaration Console ×
<terminated> Rangeq [Java Application] C:\Users\Swaroop\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v202304
34
22
15
```